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Val Leu Ile Gly Ser Glu His Gly Leu Ile Glu Val Asp Pro Val Ser
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Arg Glu Val Lys Asn Glu Val Ser Leu Val Ala Glu Gly Phe Leu Pro
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Glu Ser Val Cys Val Ala Thr Ala Ser Gly Asp Val Ile Leu Cys Ser
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Leu Ser Thr Gln Gln Leu Glu Cys Val Gly Ser Val Ala Ser Gly Ile
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Ser Val Met Ser Trp Ser Pro Asp Gln Glu Leu Val Leu Leu Ala Thr
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Gly Gln Gln Thr Leu Ile Met Met Thr Lys Asp Phe Glu Pro Ile Leu
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Glu Gln Gln Ile His Gln Asp Asp Phe Gly Glu Ser Lys Phe Ile Thr
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Val Gly Trp Gly Arg Lys Glu Thr Gln Phe His Gly Ser Glu Gly Arg
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Gln Ala Ala Phe Gln Met Gln Met His Glu Ser Ala Leu Pro Trp Asp
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Asp His Arg Pro Gln Val Thr Trp Arg Gly Asp Gly Gln Phe Phe Ala
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Val Ser Val Val Cys Pro Glu Thr Gly Ala Arg Lys Val Arg Val Trp
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Gly Pro Ala Leu Ala Trp Lys Pro Ser Gly Ser Leu Ile Ala Ser Thr
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Gln Asp Lys Pro Asn Gln Gln Asp Ile Val Phe Phe Glu Lys Asn Gly
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Leu Leu His Gly His Phe Thr Leu Pro Phe Leu Lys Asp Glu Val Lys
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Val Asn Asp Leu Leu Trp Asn Ala Asp Ser Ser Val Leu Ala Val Arg
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Leu Glu Asp Leu Gln Arg Glu Lys Ser Ser Ile Pro Lys Thr Cys Val
305                 310                 315                 320

Gln Leu Trp Thr Val Gly Asn Tyr His Trp Tyr Leu Lys Gln Ser Leu
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Ser Phe Ser Thr Cys Gly Lys Ser Lys Ile Val Ser Leu Met Trp Asp
                340                 345                 350

Pro Val Thr Pro Tyr Arg Leu His Val Leu Cys Gln Gly Trp His Tyr
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Leu Ala Tyr Asp Trp His Trp Thr Thr Asp Arg Ser Val Gly Asp Asn
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Ser Ser Asp Leu Ser Asn Val Ala Val Ile Asp Gly Asn Arg Val Leu
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Gln Leu Leu Phe Pro His Pro Val Asn Gln Val Thr Phe Leu Ala His
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Pro Gln Lys Ser Asn Asp Leu Ala Val Leu Asp Ala Ser Asn Gln Ile
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Ser Val Tyr Lys Cys Gly Asp Cys Pro Ser Ala Asp Pro Thr Val Lys
    450             455             460

Leu Gly Ala Val Gly Gly Ser Gly Phe Lys Val Cys Leu Arg Thr Pro
465             470             475             480

His Leu Glu Lys Arg Tyr Lys Ile Gln Phe Glu Asn Asn Glu Asp Gln
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Asp Val Asn Pro Leu Lys Leu Gly Leu Leu Thr Trp Ile Glu Glu Asp
            500             505             510

Val Phe Leu Ala Val Ser His Ser Glu Phe Ser Pro Arg Ser Val Ile
            515             520             525

His His Leu Thr Ala Ala Ser Ser Glu Met Asp Glu Glu His Gly Gln
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Leu Asn Val Ser Ser Ser Ala Ala Val Asp Gly Val Ile Ile Ser Leu
545             550             555             560

Cys Cys Asn Ser Lys Thr Lys Ser Val Val Leu Gln Leu Ala Asp Gly
            565             570             575

Gln Ile Phe Lys Tyr Leu Trp Glu Ser Pro Ser Leu Ala Ile Lys Pro
            580             585             590

Trp Lys Asn Ser Gly Gly Phe Pro Val Arg Phe Pro Tyr Pro Cys Thr
        595             600             605

Gln Thr Glu Leu Ala Met Ile Gly Glu Glu Glu Cys Val Leu Gly Leu
    610             615             620

Thr Asp Arg Cys Arg Phe Phe Ile Asn Asp Ile Glu Val Ala Ser Asn
625             630             635             640

Ile Thr Ser Phe Ala Val Tyr Asp Glu Phe Leu Leu Leu Thr Thr His
            645             650             655

Ser His Thr Cys Gln Cys Phe Cys Leu Arg Asp Ala Ser Phe Lys Thr
            660             665             670

Leu Gln Ala Gly Leu Ser Ser Asn His Val Ser His Gly Glu Val Leu
        675             680             685

Arg Lys Val Glu Arg Gly Ser Arg Ile Val Thr Val Val Pro Gln Asp
    690             695             700

Thr Lys Leu Val Leu Gln Met Pro Arg Gly Asn Leu Glu Val Val His
705             710             715             720
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His Arg Ala Leu Val Leu Ala Gln Ile Arg Lys Trp Leu Asp Lys Leu
                  725   730   735

Met Phe Lys Glu Ala Phe Glu Cys Met Arg Lys Leu Arg Ile Asn Leu
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Asn Pro Ile Tyr Asp His Asn Pro Lys Val Phe Leu Gly Asn Val Glu
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Thr Phe Ile Lys Gln Ile Asp Ser Val Asn His Ile Asn Leu Phe Phe
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Val Thr Ser Ser Val Tyr Leu Ser Arg Asp Pro Asp Gly Asn Lys Ile
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Asp Leu Val Cys Asp Ala Met Arg Ala Val Met Glu Ser Ile Asn Pro
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His Lys Tyr Cys Leu Ser Ile Leu Thr Ser His Val Lys Lys Thr Thr
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Pro Glu Leu Glu Ile Val Leu Gln Lys Val His Glu Leu Gln Gly Asn
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Ala Pro Ser Asp Pro Asp Ala Val Ser Ala Glu Glu Ala Leu Lys Tyr
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Thr Tyr Asp Phe Asp Leu Val Leu Met Val Ala Glu Lys Ser Gln Lys
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Asp Pro Lys Glu Tyr Leu Pro Phe Leu Asn Thr Leu Lys Lys Met Glu
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Thr Asn Tyr Gln Arg Phe Thr Ile Asp Lys Tyr Leu Lys Arg Tyr Glu
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Lys Ala Ile Gly His Leu Ser Lys Cys Gly Pro Glu Tyr Phe Pro Glu
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Cys Leu Asn Leu Ile Lys Asp Lys Asn Leu Tyr Asn Glu Ala Leu Lys
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Gly Glu His Leu Met Gln Glu His Met Tyr Glu Pro Ala Gly Leu Met
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Phe Ala Arg Cys Gly Ala His Glu Lys Ala Leu Ser Ala Phe Leu Thr
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Cys Gly Asn Trp Lys Gln Ala Leu Cys Val Ala Ala Gln Leu Asn Phe
1025   1030   1035   1040

Thr Lys Asp Gln Leu Val Gly Leu Gly Arg Thr Leu Ala Gly Lys Leu
              1045   1050   1055

Val Glu Gln Arg Lys His Ile Asp Ala Ala Met Val Leu Glu Glu Ser
        1060   1065   1070

Ala Gln Asp Tyr Glu Glu Ala Val Leu Leu Leu Leu Glu Gly Ala Ala
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Trp Glu Glu Ala Leu Arg Leu Val Tyr Lys Tyr Asn Arg Leu Asp Ile
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Ile Glu Thr Asn Val Lys Pro Ser Ile Leu Glu Ala Gln Lys Asn Tyr
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Met Ala Phe Leu Asp Ser Gln Thr Ala Thr Phe Ser Arg His Lys Lys
        1125   1130   1135

Arg Leu Leu Val Val Arg Glu Leu Lys Glu Gln Ala Gln Gln Ala Gly
        1140   1145   1150

Leu Asp Asp Glu Val Pro His Gly Gln Glu Ser Asp Leu Phe Ser Glu
        1155   1160   1165

Thr Ser Ser Val Val Ser Gly Ser Glu Met Ser Gly Lys Tyr Ser His
      1170   1175   1180

Ser Asn Ser Arg Ile Ser Ala Arg Ser Ser Lys Asn Arg Arg Lys Ala
1185   1190   1195   1200

Glu Arg Lys Lys His Ser Leu Lys Glu Gly Ser Pro Leu Glu Asp Leu
        1205   1210   1215

Ala Leu Leu Glu Ala Leu Ser Glu Val Val Gln Asn Thr Glu Asn Leu
        1220   1225   1230

Lys Asp Glu Val Tyr His Ile Leu Lys Val Leu Phe Leu Phe Glu Phe
        1235   1240   1245

Asp Glu Gln Gly Arg Glu Leu Gln Lys Ala Phe Glu Asp Thr Leu Gln
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Leu Met Glu Arg Ser Leu Pro Glu Ile Trp Thr Leu Thr Tyr Gln Gln
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Asn Ser Ala Thr Pro Val Leu Gly Pro Asn Ser Thr Ala Asn Ser Ile
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Met Ala Ser Tyr Gln Gln Gln Lys Thr Ser Val Pro Val Leu Asp Ala
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Ser Leu Leu Asp
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Arg Glu Val Lys Thr Glu Ile Ser Leu Val Ala Glu Gly Phe Leu Pro
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Glu Asp Gly Ser Gly Cys Ile Val Gly Ile Gln Asp Leu Leu Asp Gln
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Glu Ser Val Cys Val Ala Thr Ala Ser Gly Asp Val Ile Val Cys Asn
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Leu Ser Thr Gln Gln Leu Glu Cys Val Gly Ser Val Ala Ser Gly Ile
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Ser Val Met Ser Trp Ser Pro Asp Gln Glu Leu Leu Leu Leu Ala Thr
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Ala Gln Gln Thr Leu Ile Met Met Thr Lys Asp Phe Glu Val Ile Ala
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Glu Glu Gln Ile His Gln Asp Asp Phe Gly Glu Gly Lys Phe Val Thr
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Val Gly Trp Gly Ser Lys Gln Thr Gln Phe His Gly Ser Glu Gly Arg
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Pro Thr Ala Phe Pro Val Gln Leu Pro Glu Asn Ala Leu Pro Trp Asp
            180                 185                 190

Asp Arg Arg Pro His Ile Thr Trp Arg Gly Asp Gly Gln Tyr Phe Ala
        195                 200                 205

Val Ser Val Val Cys Arg Gln Thr Glu Ala Arg Lys Ile Arg Val Trp
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Asn Arg Glu Phe Ala Leu Gln Ser Thr Ser Glu Ser Val Pro Gly Leu
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Gly Pro Ala Leu Ala Trp Lys Pro Ser Gly Ser Leu Ile Ala Ser Thr
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Leu Leu His Gly His Phe Thr Leu Pro Phe Leu Lys Asp Glu Val Lys
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Val Asn Asp Leu Leu Trp Asn Ala Asp Ser Ser Val Leu Ala Ile Trp
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Leu Glu Asp Leu Pro Lys Glu Asp Ser Ser Thr Leu Lys Ser Tyr Val
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Gln Leu Trp Thr Val Gly Asn Tyr His Trp Tyr Leu Lys Gln Ser Leu
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Ala Asn Asp Leu Ala Asn Val Ala Val Ile Asp Gly Asn Arg Val Leu
385             390             395             400

Val Thr Val Phe Arg Gln Thr Val Val Pro Pro Pro Met Cys Thr Tyr
            405             410             415

Arg Leu Leu Ile Pro His Pro Val Asn Gln Val Ile Phe Ser Ala His
            420             425             430

Leu Gly Asn Asp Leu Ala Val Leu Asp Ala Ser Asn Gln Ile Ser Val
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Tyr Lys Cys Gly Asp Lys Pro Asn Met Asp Ser Thr Val Lys Leu Gly
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Ala Val Gly Gly Asn Gly Phe Lys Val Pro Leu Thr Thr Pro His Leu
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Glu Lys Arg Tyr Ser Ile Gln Phe Gly Asn Asn Glu Glu Glu Glu Glu
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Glu Asp Phe Ala Leu Gln Leu Ser Phe Leu Thr Trp Val Glu Asp Asp
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Thr Phe Leu Ala Ile Ser Tyr Ser His Ser Ser Ser Gln Ser Ile Ile
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His His Leu Thr Val Thr His Ser Glu Val Asp Glu Glu Gln Gly Gln
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Cys Cys Cys Ser Lys Thr Lys Ser Leu Ala Val Gln Leu Ala Asp Gly
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Trp Lys Asn Ser Glu Gly Ile Pro Val Arg Phe Val His Pro Cys Thr
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Ile Thr Ser Phe Ala Val Cys Asp Asp Phe Leu Leu Val Thr Thr His
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785                    790                    795                    800
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Thr Asn Tyr Gln Arg Phe Thr Ile Asp Lys Tyr Leu Lys Arg Tyr Glu
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Lys Ala Leu Gly His Leu Ser Lys Cys Gly Pro Glu Tyr Phe Thr Glu
945                    950                    955                    960
Cys Leu Asn Leu Ile Lys Asp Lys Asn Leu Tyr Lys Glu Ala Leu Lys
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Leu Tyr Arg Pro Asp Ser Pro Gln Tyr Gln Ala Val Ser Met Ala Tyr
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Gly Glu His Leu Met Gln Glu His Leu Tyr Glu Pro Ala Gly Leu Val
    995                 1000                1005

Phe Ala Arg Cys Gly Ala Gln Glu Lys Ala Leu Glu Ala Phe Leu Ala
    1010                1015                1020

Cys Gly Ser Trp Gln Gln Ala Leu Cys Val Ala Ala Gln Leu Gln Met
1025                1030                1035                1040

Ser Lys Asp Lys Val Ala Gly Leu Ala Arg Thr Leu Ala Gly Lys Leu
                1045                1050                1055

Val Glu Gln Arg Lys His Ser Glu Ala Ala Thr Val Leu Glu Gln Tyr
                1060                1065                1070

Ala Gln Asp Tyr Glu Glu Ala Val Leu Leu Leu Leu Glu Gly Ser Ala
                1075                1080                1085

Trp Glu Glu Ala Leu Arg Leu Val Tyr Lys Tyr Asp Arg Val Asp Ile
    1090                1095                1100

Ile Glu Thr Ser Ile Lys Pro Ser Ile Leu Glu Ala Gln Lys Asn Tyr
1105                1110                1115                1120

Met Asp Phe Leu Asp Ser Glu Thr Ala Thr Phe Ile Arg His Lys Asn
                1125                1130                1135

Arg Leu Gln Val Val Arg Ala Leu Arg Arg Gln Ala Pro Gln Val His
                1140                1145                1150

Val Asp His Glu Val Ala His Gly Pro Glu Ser Asp Leu Phe Ser Glu
        1155                1160                1165

Thr Ser Ser Ile Met Ser Gly Ser Glu Met Ser Gly Arg Tyr Ser His
    1170                1175                1180

Ser Asn Ser Arg Ile Ser Ala Arg Ser Ser Lys Asn Arg Arg Lys Ala
1185                1190                1195                1200


Glu Arg Lys Lys His Ser Leu Lys Glu Gly Ser Pro Leu Glu Gly Leu
                1205                1210                1215

Ala Leu Leu Glu Ala Leu Ser Glu Val Val Gln Ser Val Glu Lys Leu
                1220                1225                1230

Lys Asp Glu Val Arg Ala Ile Leu Lys Val Leu Phe Leu Phe Glu Phe
                1235                1240                1245

Glu Glu Gln Ala Lys Glu Leu Gln Arg Ala Phe Glu Ser Thr Leu Gln
    1250                1255                1260

Leu Met Glu Arg Ala Val Pro Glu Ile Trp Thr Pro Ala Gly Gln Gln
1265                1270                1275                1280

Ser Ser Thr Thr Pro Val Leu Gly Pro Ser Ser Thr Ala Asn Ser Ile
                1285                1290                1295

Thr Ala Ser Tyr Gln Gln Gln Lys Thr Cys Val Pro Ala Leu Asp Ala
                1300                1305                1310

Gly Val Tyr Met Pro Pro Lys Met Asp Pro Arg Ser Gln Trp Lys Leu
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Ser Leu Leu Glu
  1330

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Gly Pro Gly Asn Pro Gln Cys Phe Ser Leu Arg Thr Glu Gln Gly Thr
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Val Leu Ile Gly Ser Glu His Gly Leu Ile Glu Val Asp Pro Val Ser
         35   40   45

Arg Glu Val Lys Asn Glu Val Ser Leu Val Ala Glu Gly Phe Leu Pro
     50   55   60

Glu Asp Gly Ser Gly Arg Ile Val Gly Val Gln Asp Leu Leu Asp Gln
 65   70   75   80

Glu Ser Val Cys Val Ala Thr Ala Ser Gly Asp Val Ile Leu Cys Ser
                 85   90   95

Leu Ser Thr Gln Gln Leu Glu Cys Val Gly Ser Val Ala Ser Gly Ile
             100   105   110

Ser Val Met Ser Trp Ser Pro Asp Gln Glu Leu Val Leu Leu Ala Thr
             115   120   125

Gly Gln Gln Thr Leu Ile Met Met Thr Lys Asp Phe Glu Pro Ile Leu
     130   135   140

Glu Gln Gln Ile His Gln Asp Asp Phe Gly Glu Ser Lys Phe Ile Thr
145   150   155   160

Val Gly Trp Gly Arg Lys Glu Thr Gln Phe His Gly Ser Glu Gly Arg
                 165   170   175

Gln Ala Ala Phe Gln Met Gln Met His Glu Ser Ala Leu Pro Trp Asp
             180   185   190

Asp His Arg Pro Gln Val Thr Trp Arg Gly Asp Gly Gln Phe Phe Ala
         195   200   205

Val Ser Val Val Cys Pro Glu Thr Gly Ala Arg Lys Val Arg Val Trp
     210   215   220

Asn Arg Glu Phe Ala Leu Gln Ser Thr Ser Glu Pro Val Ala Gly Leu
225   230   235   240

Gly Pro Ala Leu Ala Trp Lys Pro Ser Gly Ser Leu Ile Ala Ser Thr
             245   250   255

Gln Asp Lys Pro Asn Gln Gln Asp Ile Val Phe Phe Glu Lys Asn Gly
             260   265   270

Leu Leu His Gly His Phe Thr Leu Pro Phe Leu Lys Asp Glu Val Lys
                          Page 29

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                                        275                     280                           285
            Val Asn Asp Leu Leu Trp Asn Ala Asp Ser Ser Val Leu Ala Val Trp
                290                     295                     300

            Leu Glu Asp Leu Gln Arg Glu Glu Ser Ser Ile Pro Lys Thr Cys Val
            305                     310                     315                     320

            Gln Leu Trp Thr Val Gly Asn Tyr His Trp Tyr Leu Lys Gln Ser Leu
                                325                     330                     335

            Ser Phe Ser Thr Cys Gly Lys Ser Lys Ile Val Ser Leu Met Trp Asp
                                340                     345                     350

            Pro Val Thr Pro Tyr Arg Leu His Val Leu Cys Gln Gly Trp His Tyr
                                355                     360                     365

            Leu Ala Tyr Asp Trp His Trp Thr Thr Asp Arg Ser Val Gly Asp Asn
                370                     375                     380

            Ser Ser Asp Leu Ser Asn Val Ala Val Ile Asp Gly Asn Arg Val Leu
            385                     390                     395                     400

            Val Thr Val Phe Arg Gln Thr Val Val Pro Pro Met Cys Thr Tyr
                                405                     410                     415

            Gln Leu Leu Phe Pro His Pro Val Asn Gln Val Thr Phe Leu Ala His
                                420                     425                     430


            Pro Gln Lys Ser Asn Asp Leu Ala Val Leu Asp Ala Ser Asn Gln Ile
                                435                     440                     445

            Ser Val Tyr Lys Cys Gly Asp Cys Pro Ser Ala Asp Pro Thr Val Lys
                450                     455                     460

            Leu Gly Ala Val Gly Gly Ser Gly Phe Lys Val Cys Leu Arg Thr Pro
            465                     470                     475                     480

            His Leu Glu Lys Arg Tyr Lys Ile Gln Phe Glu Asn Asn Glu Asp Gln
                                485                     490                     495

            Asp Val Asn Pro Leu Lys Leu Gly Leu Leu Thr Trp Ile Glu Glu Asp
                                500                     505                     510

            Val Phe Leu Ala Val Ser His Ser Glu Phe Ser Pro Arg Ser Val Ile
                                515                     520                     525

            His His Leu Thr Ala Ala Ser Ser Glu Met Asp Glu Glu His Gly Gln
                530                     535                     540

            Leu Asn Val Ser Ser Ser Ala Ala Val Asp Gly Val Ile Ile Ser Leu
            545                     550                     555                     560

            Cys Cys Asn Ser Lys Thr Lys Ser Val Val Leu Gln Leu Ala Asp Gly
                                565                     570                     575

            Gln Ile Phe Lys Tyr Leu Trp Glu Ser Pro Ser Leu Ala Ile Lys Pro
                                580                     585                     590

            Trp Lys Asn Ser Gly Gly Phe Pro Val Arg Phe Pro Tyr Pro Cys Thr
                                595                     600                     605
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Gln Thr Glu Leu Ala Met Ile Gly Glu Glu Glu Cys Val Leu Gly Leu
610   615   620

Thr Asp Arg Cys Arg Phe Phe Ile Asn Asp Ile Glu Val Ala Ser Asn
625   630   635   640

Ile Thr Ser Phe Ala Val Tyr Asp Glu Phe Leu Leu Leu Thr Thr His
             645   650   655

Ser His Thr Cys Gln Cys Phe Cys Leu Arg Asp Ala Ser Phe Lys Thr
             660   665   670

Leu Gln Ala Gly Leu Ser Ser Asn His Val Ser His Gly Glu Val Leu
             675   680   685

Arg Lys Val Glu Arg Gly Ser Arg Ile Val Thr Val Val Pro Gln Asp
    690   695   700

Thr Lys Leu Val Leu Gln Met Pro Arg Gly Asn Leu Glu Val Val His
705   710   715   720

His Arg Ala Leu Val Leu Ala Gln Ile Arg Lys Trp Leu Asp Lys Leu
             725   730   735

Met Phe Lys Glu Ala Phe Glu Cys Met Arg Lys Leu Arg Ile Asn Leu
             740   745   750

Asn Leu Ile Tyr Asp His Asn Pro Lys Val Phe Leu Gly Asn Val Glu
             755   760   765

Thr Phe Ile Lys Gln Ile Asp Ser Val Asn His Ile Asn Leu Phe Phe
    770   775   780

Thr Glu Leu Lys Glu Glu Asp Val Thr Lys Thr Met Tyr Pro Ala Pro
785   790   795   800

Val Thr Ser Ser Val Tyr Leu Ser Arg Asp Pro Asp Gly Asn Lys Ile
             805   810   815

Asp Leu Val Cys Asp Ala Met Arg Ala Val Met Glu Ser Ile Asn Pro
             820   825   830

His Lys Tyr Cys Leu Ser Ile Leu Thr Ser His Val Lys Lys Thr Thr
             835   840   845

Pro Glu Leu Glu Ile Val Leu Gln Lys Val His Glu Leu Gln Gly Asn
    850   855   860

Ala Pro Ser Asp Pro Asp Ala Val Ser Ala Glu Glu Ala Leu Lys Tyr
865   870   875   880

Leu Leu His Leu Val Asp Val Asn Glu Leu Tyr Asp His Ser Leu Gly
             885   890   895

Thr Tyr Asp Phe Asp Leu Val Leu Met Val Ala Glu Lys Ser Gln Lys
             900   905   910

Asp Pro Lys Glu Tyr Leu Pro Phe Leu Asn Thr Leu Lys Lys Met Glu
    915   920   925

Thr Asn Tyr Gln Arg Phe Thr Ile Asp Lys Tyr Leu Lys Arg Tyr Glu
    930   935   940

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Lys Ala Ile Gly His Leu Ser Lys Cys Gly Pro Glu Tyr Phe Pro Glu
945   950   955   960

Cys Leu Asn Leu Ile Lys Asp Lys Asn Leu Tyr Asn Glu Ala Leu Lys
                965   970   975

Leu Tyr Ser Pro Ser Ser Gln Gln Tyr Gln Asp Ile Ser Ile Ala Tyr
                980   985   990

Gly Glu His Leu Met Gln Glu His Met Tyr Glu Pro Ala Gly Leu Met
            995   1000   1005

Phe Ala Arg Cys Gly Ala His Glu Lys Ala Leu Ser Ala Phe Leu Thr
    1010   1015   1020

Cys Gly Asn Trp Lys Gln Ala Leu Cys Val Ala Ala Gln Leu Asn Phe
1025   1030   1035   1040

Thr Lys Asp Gln Leu Val Gly Leu Gly Arg Thr Leu Ala Gly Lys Leu
                1045   1050   1055

Val Glu Gln Arg Lys His Ile Asp Ala Ala Met Val Leu Glu Glu Ser
            1060   1065   1070

Ala Gln Asp Tyr Glu Glu Ala Val Leu Leu Leu Leu Glu Gly Ala Ala
        1075   1080   1085

Trp Glu Glu Ala Leu Arg Leu Val Tyr Lys Tyr Asn Arg Leu Asp Ile
    1090   1095   1100

Ile Glu Thr Asn Val Lys Pro Ser Ile Leu Glu Ala Gln Lys Asn Tyr
1105   1110   1115   1120

Met Ala Phe Leu Asp Ser Gln Thr Ala Thr Phe Ser Arg His Lys Lys
                1125   1130   1135

Arg Leu Leu Val Val Arg Glu Leu Lys Glu Gln Ala Gln Gln Ala Gly
                1140   1145   1150

Leu Asp Asp Glu Val Pro His Gly Gln Glu Ser Asp Leu Phe Ser Glu
        1155   1160   1165

Thr Ser Ser Val Val Ser Gly Ser Glu Met Ser Gly Lys Tyr Ser His
    1170   1175   1180

Ser Asn Ser Arg Ile Ser Ala Arg Ser Ser Lys Asn Arg Arg Lys Ala
1185   1190   1195   1200

Glu Arg Lys Lys His Ser Leu Lys Glu Gly Ser Pro Leu Glu Asp Leu
                1205   1210   1215

Ala Leu Leu Glu Ala Leu Ser Glu Val Val Gln Asn Thr Glu Asn Leu
        1220   1225   1230

Lys Asp Glu Val Tyr His Ile Leu Lys Val Leu Phe Leu Phe Glu Phe
        1235   1240   1245

Asp Glu Gln Gly Arg Glu Leu Gln Lys Ala Phe Glu Asp Thr Leu Gln
    1250   1255   1260

Leu Met Glu Arg Ser Leu Pro Glu Ile Trp Thr Leu Thr Tyr Gln Gln

1265   1270   1275   1280

Asn Ser Ala Thr Pro Val Leu Gly Pro Asn Ser Thr Ala Asn Ser Ile
                1285   1290   1295

Met Ala Ser Tyr Gln Gln Gln Lys Thr Ser Val Pro Val Leu Asp Ala
                1300   1305   1310

Glu Leu Phe Ile Pro Pro Lys Ile Asn Arg Arg Thr Gln Trp Lys Leu
        1315   1320   1325

Ser Leu Leu Asp
    1330

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Met Arg Asn Leu Lys Leu Arg Tyr Cys Lys Glu Leu Asn Ala Val Ala
  1   5   10   15

His Pro Gln His Leu Leu Leu Gln Pro Glu Leu Asn Gly Gly Ala Ser
                20   25   30

Asp Ile Tyr Phe Val Val Ala Asp Asn Lys Thr Tyr Ala Val Gln Glu
                35   40   45

Ser Gly Asp Val Arg Leu Lys Val Ile Ala Asp Leu Pro Asp Ile Val
        50   55   60

Gly Val Glu Phe Leu Gln Leu Asp Asn Ala Ile Cys Val Ala Ser Gly
65   70   75   80

Ala Gly Glu Val Ile Leu Val Asp Pro Gln Thr Gly Ala Thr Ser Glu
                85   90   95

Gly Thr Phe Cys Asp Val Gly Ile Glu Ser Met Ala Trp Ser Pro Asn
                100   105   110

Gln Glu Val Val Ala Phe Val Thr Arg Thr His Asn Val Val Leu Met
        115   120   125

Thr Ser Thr Phe Asp Val Ile Ala Glu Gln Pro Leu Asp Ala Glu Leu
    130   135   140

Asp Pro Asp Gln Gln Phe Val Asn Val Gly Trp Gly Lys Lys Glu Thr
145   150   155   160

Gln Phe His Gly Ser Glu Gly Lys Gln Ala Ala Lys Gln Lys Glu Ser
                165   170   175

Asp Ser Thr Phe Thr Arg Asp Glu Gln Glu Leu Asn Gln Asp Val Ser
                180   185   190

Ile Ser Trp Arg Gly Asp Gly Glu Phe Phe Val Val Ser Tyr Val Ala
        195   200   205

Ala Gln Leu Gly Arg Thr Phe Lys Val Tyr Asp Ser Glu Gly Lys Leu
    210   215   220

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Asn His Thr Ala Glu Lys Ser Ala Asn Leu Lys Asp Ser Val Val Trp
225             230             235             240

Arg Pro Thr Gly Asn Trp Ile Ala Val Pro Gln Gln Phe Pro Asn Lys
            245             250             255

Ser Thr Ile Ala Leu Phe Glu Lys Asn Gly Leu Arg His Arg Glu Leu
            260             265             270

Val Leu Pro Phe Asp Leu Gln Glu Glu Pro Val Val Gln Leu Arg Trp
            275             280             285

Ser Glu Asp Ser Asp Ile Leu Ala Ile Arg Thr Cys Ala Lys Glu Glu
    290             295             300

Gln Arg Val Tyr Leu Tyr Thr Ile Gly Asn Tyr His Trp Tyr Leu Lys
305             310             315             320

Gln Val Leu Ile Phe Glu Gln Ala Asp Pro Leu Ala Leu Leu His Trp
            325             330             335

Asp Thr Arg Cys Gly Ala Glu His Thr Leu His Val Leu Lys Glu Ser
            340             345             350

Gly Lys His Leu Val Tyr Arg Trp Ala Phe Ala Val Asp Arg Asn Asn
            355             360             365

Ser Ile Val Gly Val Ile Asp Gly Lys Arg Leu Leu Leu Thr Asp Phe
    370             375             380

Asp Glu Ala Ile Val Pro Pro Pro Met Ser Lys Glu Leu Gln Lys Pro
385             390             395             400

Ile Met Leu Met Pro Asp Ala Glu Leu Ser Gly Leu His Leu Ala Asn
            405             410             415

Leu Thr His Phe Ser Pro His Tyr Leu Leu Ala Thr His Ser Ser Ala
            420             425             430

Gly Ser Thr Arg Leu Leu Leu Leu Ser Tyr Lys Asp Asn Asp Asn Lys
            435             440             445

Pro Gly Glu Trp Phe Tyr Arg Val His Ser Ser Val Arg Ile Asn Gly
    450             455             460

Leu Val Asn Ala Val Ala Val Ala Pro Tyr Ala Met Asn Glu Phe Tyr
465             470             475             480

Val Gln Thr Val Asn Asn Gly His Thr Tyr Glu Val Ser Leu Lys Ala
            485             490             495

Asp Lys Thr Leu Lys Val Glu Arg Ser Tyr Val Gln Leu His Glu Pro
            500             505             510

Ala Asp Gln Ile Asp Trp Val Ile Val Lys Gly Cys Ile Trp Asp Gly
            515             520             525

Tyr Thr Gly Ala Leu Val Thr Leu Arg Asn Gln His Leu Leu His Ile
    530             535             540

Asp Gly Tyr Arg Ile Gly Glu Asp Val Thr Ser Phe Cys Val Val Thr
545             550             555             560
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Asn Tyr Leu Val Tyr Thr Gln Leu Asn Ala Met His Phe Val Gln Leu
              565             570             575

Asp Asp Arg Arg Gln Val Ala Ser Arg Asn Ile Glu Arg Gly Ala Lys
          580             585             590

Ile Val Thr Ala Val Ala Arg Lys Ala Arg Val Val Leu Gln Leu Pro
          595             600             605

Arg Gly Asn Leu Glu Ala Ile Cys Pro Arg Val Leu Val Leu Glu Leu
      610             615             620

Val Gly Asp Leu Leu Glu Arg Gly Lys Tyr Gln Lys Ala Ile Glu Met
625             630             635             640

Ser Arg Lys Gln Arg Ile Asn Leu Asn Ile Ile Phe Asp His Asp Val
              645             650             655

Lys Arg Phe Val Ser Ser Val Gly Ala Phe Leu Asn Asp Ile Asn Glu
              660             665             670

Pro Gln Trp Leu Cys Leu Phe Leu Ser Glu Leu Gln Asn Glu Asp Phe
          675             680             685

Thr Lys Gly Met Tyr Ser Ser Asn Tyr Asp Ala Ser Lys Gln Thr Tyr
      690             695             700

Pro Ser Asp Tyr Arg Val Asp Gln Lys Val Phe Tyr Val Cys Arg Leu
705             710             715             720

Leu Glu Gln Gln Met Asn Arg Phe Val Ser Arg Phe Arg Leu Pro Leu
              725             730             735

Ile Thr Ala Tyr Val Lys Leu Gly Cys Leu Glu Met Ala Leu Gln Val
              740             745             750

Ile Trp Lys Glu Gln Gln Glu Asp Ala Ser Leu Ala Asp Gln Leu Leu
              755             760             765

Gln His Leu Leu Tyr Leu Val Asp Val Asn Asp Leu Tyr Asn Val Ala
      770             775             780

Leu Gly Thr Tyr Asp Phe Gly Leu Val Leu Phe Val Ala Gln Lys Ser
785             790             795             800

Gln Lys Asp Pro Lys Glu Phe Leu Pro Tyr Leu Asn Asp Leu Lys Ala
          805             810             815

Leu Pro Ile Asp Tyr Arg Lys Phe Arg Ile Asp Asp His Leu Lys Arg
          820             825             830

Tyr Thr Ser Ala Leu Ser His Leu Ala Ala Cys Gly Glu Gln His Tyr
          835             840             845

Glu Glu Ala Leu Glu Tyr Ile Arg Lys His Gly Leu Tyr Thr Asp Gly
      850             855             860

Leu Ala Phe Tyr Arg Glu His Ile Glu Phe Gln Lys Asn Ile Tyr Val
865             870             875             880
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Ala Tyr Ala Asp His Leu Arg Ala Ile Ala Lys Leu Asp Asn Ala Ser
            885              890              895

Leu Met Tyr Glu Arg Gly Gly Gln Leu Gln Gln Ala Leu Leu Ser Ala
            900              905              910

Lys His Thr Leu Asp Trp Gln Arg Val Leu Val Leu Ala Lys Lys Leu
        915              920              925

Ser Glu Pro Leu Asp Gln Val Ala Gln Ser Leu Val Gly Pro Leu Gln
    930              935              940

Gln Gln Gly Arg His Met Glu Ala Tyr Glu Leu Val Lys Glu His Cys
945              950              955              960

Gln Asp Arg Lys Arg Gln Phe Asp Val Leu Leu Glu Gly His Leu Tyr
            965              970              975

Ser Arg Ala Ile Tyr Glu Ala Gly Leu Glu Asp Asp Asp Val Ser Glu
            980              985              990

Lys Ile Ala Pro Ala Leu Leu Ala Tyr Gly Val Gln Leu Glu Ser Ser
        995              1000             1005

Leu Gln Ala Asp Leu Gln Leu Phe Leu Asp Tyr Lys Gln Arg Leu Leu
    1010             1015             1020

Asp Ile Arg Arg Asn Gln Ala Lys Ser Gly Glu Gly Tyr Ile Asp Thr
1025             1030             1035             1040

Asp Val Asn Leu Lys Glu Val Asp Leu Leu Ser Asp Thr Thr Ser Leu
            1045             1050             1055

His Ser Ser Gln Tyr Ser Gly Thr Ser Arg Arg Thr Gly Lys Thr Phe
            1060             1065             1070

Arg Ser Ser Lys Asn Arg Arg Lys His Glu Arg Lys Leu Phe Ser Leu
        1075             1080             1085

Lys Pro Gly Asn Pro Phe Glu Asp Ile Ala Leu Ile Asp Ala Leu His
    1090             1095             1100

Asn His Val Thr Lys Ile Ala Gln Gln Gln Pro Val Arg Asp Thr
1105             1110             1115             1120

Cys Lys Ala Leu Leu Gln Leu Ala Asn Ala Ala Asp Ala Asp Pro Leu
            1125             1130             1135

Ala Ala Ala Leu Gln Arg Glu Phe Lys Thr Leu Leu Gln Ala Val Asp
            1140             1145             1150

Ala Ala Leu Asp Glu Ile Trp Thr Pro Glu Leu Arg Gly Asn Gly Leu
        1155             1160             1165

Met Ala Asp His Leu Thr Gly Pro Asn Val Asp Tyr Leu Ala Leu Gln
    1170             1175             1180

Lys Glu Gln Arg Tyr Ala Leu Leu Ser Pro Leu Lys Arg Phe Lys Pro
1185             1190             1195             1200

Gln Leu Ile Met Met Asp Trp Gln His Glu Ile Leu Gln
            1205             1210
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<212> PRT
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Ala Ser Thr Ala Glu Gly Asp Glu Asp Asp Leu Ser Phe Thr Leu Leu
            35   40   45

Asp Ser Val Phe Asp Thr Leu Ser Asp Ser Ile Thr Cys Val Leu Gly
        50   55   60

Ser Thr Asp Ile Gly Ala Ile Glu Val Gln Gln Phe Met Lys Asp Gly
65   70   75   80

Ser Arg Asn Val Leu Ala Ser Phe Asn Ile Gln Thr Phe Asp Asp Lys
                85   90   95

Leu Leu Ser Phe Val His Phe Ala Asp Ile Asn Gln Leu Val Phe Val
                100   105   110

Phe Glu Gln Gly Asp Ile Ile Thr Ala Thr Tyr Asp Pro Val Ser Leu
            115   120   125

Asp Pro Ala Glu Thr Leu Ile Glu Ile Met Gly Thr Ile Asp Asn Gly
    130   135   140

Ile Ala Ala Ala Gln Trp Ser Tyr Asp Glu Glu Thr Leu Ala Met Val
145   150   155   160

Thr Lys Asp Arg Asn Val Val Val Leu Ser Lys Leu Phe Glu Pro Ile
                165   170   175

Ser Glu Tyr His Leu Glu Val Asp Asp Leu Lys Ile Ser Lys His Val
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Thr Val Gly Trp Gly Lys Lys Glu Thr Gln Phe Arg Gly Lys Gly Ala
        195   200   205

Arg Ala Met Glu Arg Glu Ala Leu Ala Ser Leu Lys Ala Ser Gly Leu
    210   215   220

Val Gly Asn Gln Leu Arg Asp Pro Thr Met Pro Tyr Met Val Asp Thr
225   230   235   240

Gly Asp Val Thr Ala Leu Asp Ser His Glu Ile Thr Ile Ser Trp Arg
                245   250   255

Gly Asp Cys Asp Tyr Phe Ala Val Ser Ser Val Glu Glu Val Pro Asp
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Glu Asp Asp Glu Thr Lys Ser Ile Lys Arg Arg Ala Phe Arg Val Phe
    275   280   285

Ser Arg Glu Gly Gln Leu Asp Ser Ala Ser Glu Pro Val Thr Gly Met

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              290                   295                   300
Glu His Gln Leu Ser Trp Lys Pro Gln Gly Ser Leu Ile Ala Ser Ile
305                   310                   315                   320

Gln Arg Lys Thr Asp Leu Gly Glu Glu Asp Ser Val Asp Val Ile Phe
                  325                   330                   335

Phe Glu Arg Asn Gly Leu Arg His Gly Glu Phe Asp Thr Arg Leu Pro
                  340                   345                   350

Leu Asp Glu Lys Val Glu Ser Val Cys Trp Asn Ser Asn Ser Glu Ala
              355                   360                   365

Leu Ala Val Val Leu Ala Asn Arg Ile Gln Leu Trp Thr Ser Lys Asn
    370                   375                   380

Tyr His Trp Tyr Leu Lys Gln Glu Leu Tyr Ala Ser Asp Ile Ser Tyr
385                   390                   395                   400

Val Lys Trp His Pro Glu Lys Asp Phe Thr Leu Met Phe Ser Asp Ala
                  405                   410                   415

Gly Phe Ile Asn Ile Val Asp Phe Ala Tyr Lys Met Ala Gln Gly Pro
                  420                   425                   430

Thr Leu Glu Pro Phe Asp Asn Gly Thr Ser Leu Val Val Asp Gly Arg
              435                   440                   445

Thr Val Asn Ile Thr Pro Leu Ala Leu Ala Asn Val Pro Pro Pro Met
    450                   455                   460

Tyr Tyr Arg Asp Phe Glu Thr Pro Gly Asn Val Leu Asp Val Ala Cys
465                   470                   475                   480

Ser Phe Ser Asn Glu Ile Tyr Ala Ala Ile Asn Lys Asp Val Leu Ile
                  485                   490                   495

Phe Ala Ala Val Pro Ser Ile Glu Glu Met Lys Lys Gly Lys His Pro
                  500                   505                   510

Ser Ile Val Cys Glu Phe Pro Lys Ser Glu Phe Thr Ser Glu Val Asp
              515                   520                   525

Ser Leu Arg Gln Val Ala Phe Ile Asn Asp Ser Ile Val Gly Val Leu
    530                   535                   540


Leu Asp Thr Asp Asn Leu Ser Arg Ile Ala Leu Leu Asp Ile Gln Asp
545                   550                   555                   560

Ile Thr Gln Pro Thr Leu Ile Thr Ile Val Glu Val Tyr Asp Lys Ile
                  565                   570                   575

Val Leu Leu Ser Ser Asp Phe Asp Tyr Asn His Leu Val Tyr Glu Thr
                  580                   585                   590

Arg Asp Gly Thr Val Cys Gln Leu Asp Ala Glu Gly Gln Leu Met Glu
              595                   600                   605

Ile Thr Lys Phe Pro Gln Leu Val Arg Asp Phe Arg Val Lys Arg Val
    610                   615                   620
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His Asn Thr Ser Ala Glu Asp Asp Asp Asn Trp Ser Ala Glu Ser Ser
625   630   635   640

Glu Leu Val Ala Phe Gly Ile Thr Asn Asn Gly Lys Leu Phe Ala Asn
            645   650   655

Gln Val Leu Leu Ala Ser Ala Val Thr Ser Leu Glu Ile Thr Asp Ser
        660   665   670

Phe Leu Leu Phe Thr Thr Ala Gln His Asn Leu Gln Phe Val His Leu
        675   680   685

Asn Ser Thr Asp Phe Lys Pro Leu Pro Leu Val Glu Glu Gly Val Glu
    690   695   700

Asp Glu Arg Val Arg Ala Ile Glu Arg Gly Ser Ile Leu Val Ser Val
705   710   715   720

Ile Pro Ser Lys Arg Ser Val Val Leu Gln Ala Thr Arg Gly Asn Leu
            725   730   735

Glu Thr Ile Tyr Pro Arg Ile Met Val Leu Ala Glu Val Arg Lys Asn
            740   745   750

Ile Met Ala Lys Arg Tyr Lys Glu Ala Phe Ile Val Cys Arg Thr His
        755   760   765

Arg Ile Asn Leu Asp Ile Leu His Asp Tyr Ala Pro Glu Leu Phe Ile
    770   775   780

Glu Asn Leu Glu Val Phe Ile Asn Gln Ile Gly Arg Val Asp Tyr Leu
785   790   795   800

Asn Leu Phe Ile Ser Cys Leu Ser Glu Asp Asp Val Thr Lys Thr Lys
        805   810   815

Tyr Lys Glu Thr Leu Tyr Ser Gly Ile Ser Lys Ser Phe Gly Met Glu
        820   825   830

Pro Ala Pro Leu Thr Glu Met Gln Ile Tyr Met Lys Lys Lys Met Phe
        835   840   845

Asp Pro Lys Thr Ser Lys Val Asn Lys Ile Cys Asp Ala Val Leu Asn
    850   855   860

Val Leu Leu Ser Asn Pro Glu Tyr Lys Lys Lys Tyr Leu Gln Thr Ile
865   870   875   880

Ile Thr Ala Tyr Ala Ser Gln Asn Pro Gln Asn Leu Ser Ala Ala Leu
            885   890   895

Lys Leu Ile Ser Glu Leu Glu Asn Ser Glu Glu Lys Asp Ser Cys Val
        900   905   910

Thr Tyr Leu Cys Phe Leu Gln Asp Val Asn Val Val Tyr Lys Ser Ala
        915   920   925

Leu Ser Leu Tyr Asp Val Ser Leu Ala Leu Leu Val Ala Gln Lys Ser
    930   935   940

Gln Met Asp Pro Arg Glu Tyr Leu Pro Phe Leu Gln Glu Leu Gln Asp
945   950   955   960

Asn Glu Pro Leu Arg Arg Lys Phe Leu Ile Asp Asp Tyr Leu Gly Asn
            965   970   975

Tyr Glu Lys Ala Leu Glu His Leu Ser Glu Ile Asp Lys Asp Gly Asn
            980   985   990

Val Ser Glu Glu Val Ile Asp Tyr Val Glu Ser His Asp Leu Tyr Lys
        995   1000   1005

His Gly Leu Ala Leu Tyr Arg Tyr Asp Ser Glu Lys Gln Asn Val Ile
    1010   1015   1020

Tyr Asn Ile Tyr Ala Lys His Leu Ser Ser Asn Gln Met Tyr Thr Asp
1025   1030   1035   1040

Ala Ala Val Ala Tyr Glu Met Leu Gly Lys Leu Lys Glu Ala Met Gly
            1045   1050   1055

Ala Tyr Gln Ser Ala Lys Arg Trp Arg Glu Ala Met Ser Ile Ala Val
            1060   1065   1070

Gln Lys Phe Pro Glu Glu Val Glu Ser Val Ala Glu Glu Leu Ile Ser
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Ser Leu Thr Phe Glu His Arg Tyr Val Asp Ala Ala Asp Ile Gln Leu
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Glu Tyr Leu Asp Asn Val Lys Glu Ala Val Ala Leu Tyr Cys Lys Ala
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Tyr Arg Tyr Asp Ile Ala Ser Leu Val Ala Ile Lys Ala Lys Lys Asp
            1125   1130   1135

Glu Leu Leu Glu Glu Val Val Asp Pro Gly Leu Gly Glu Gly Phe Gly
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Ile Ile Ala Glu Leu Leu Ala Asp Cys Lys Gly Gln Ile Asn Ser Gln
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Leu Arg Arg Leu Arg Glu Leu Arg Ala Lys Lys Glu Glu Asn Pro Tyr
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Ala Phe Tyr Gly Gln Glu Thr Glu Gln Ala Asp Asp Val Ser Val Ala
1185   1190   1195   1200

Pro Ser Glu Thr Ser Thr Gln Glu Ser Phe Phe Thr Arg Tyr Thr Gly
            1205   1210   1215

Lys Thr Gly Gly Thr Ala Lys Thr Gly Ala Ser Arg Arg Thr Ala Lys
            1220   1225   1230

Asn Lys Arg Arg Glu Glu Arg Lys Arg Ala Arg Gly Lys Lys Gly Thr
    1235   1240   1245

Ile Tyr Glu Glu Glu Tyr Leu Val Gln Ser Val Gly Arg Leu Ile Glu
    1250   1255   1260

Arg Leu Asn Gln Thr Lys Pro Asp Ala Val Arg Val Val Glu Gly Leu
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Cys Arg Arg Asn Met Arg Glu Gln Ala His Gln Ile Gln Lys Asn Phe

Page 40

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Val Glu Val Leu Asp Leu Leu Lys Ala Asn Val Lys Glu Ile Tyr Ser
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Ile Ser Glu Lys Asp Arg Glu Arg Val Asn Glu Asn Gly Glu Val Tyr
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His Ile Val Asp Phe
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Ser Arg Leu Phe Phe Ala Ser Ser Ala Asn Phe Val Tyr Ala Leu Gln
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Leu Ser Ser Phe Gln Asn Glu Ser Ala Gly Ala Lys Ser Ala Met Pro
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Val Glu Val Cys Ser Ile Asp Ile Glu Pro Gly Asp Phe Ile Thr Ala
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Phe Asp Tyr Leu Ala Glu Lys Glu Ser Leu Leu Ile Gly Thr Ser His
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Gly Leu Leu Leu Val His Asn Val Glu Ser Asp Val Thr Glu Leu Val
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Gly Asn Ile Glu Gly Gly Val Lys Cys Ile Ser Pro Asn Pro Thr Gly
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Asp Leu Leu Gly Leu Ile Thr Gly Leu Gly Gln Leu Ile Val Met Thr
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Tyr Asp Trp Ala Leu Met Tyr Glu Lys Ala Leu Gly Glu Val Pro Glu
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Gly Gly Tyr Val Arg Glu Thr Asn Asp Leu Ser Val Asn Cys Gly Gly
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Ile Ser Ile Ser Trp Arg Gly Asp Gly Lys Tyr Phe Ala Thr Met Gly
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Glu Val Tyr Glu Ser Gly Cys Met Ser Lys Lys Ile Lys Ile Trp Glu
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Ser Asp Ser Gly Ala Leu Gln Ser Ser Ser Glu Thr Lys Glu Phe Thr
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Tyr Lys Arg Lys Ser Asp Asp Ser Ser Pro Ser Ile Ala Phe Phe Glu
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Ala Thr Glu Ser Cys Glu Asn Leu Lys Trp Asn Ser Ala Ser Asp Leu
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Leu Ala Gly Val Val Ser Cys Lys Thr Tyr Asp Ala Ile Arg Val Trp
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Arg Glu Ala Gly Val Thr Val Met Trp Asp Pro Thr Lys Pro Leu Gln
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Leu Ile Cys Trp Thr Leu Ser Gly Gln Val Ser Val Arg His Phe Met
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Trp Val Thr Ala Val Met Glu Asp Ser Thr Ala Phe Val Ile Asp Asn
        355   360   365

Ser Lys Ile Leu Val Thr Pro Leu Ser Leu Ser Leu Met Pro Pro Pro
    370   375   380

Met Tyr Leu Phe Ser Leu Ser Phe Ser Ser Ala Val Arg Asp Ile Ala
385   390   395   400

Tyr Tyr Ser Arg Asn Ser Lys Asn Cys Leu Ala Val Phe Leu Ser Asp
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Gly Asn Leu Ser Phe Val Glu Phe Pro Ala Pro Asn Thr Trp Glu Asp
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Gly Gly Lys Val Leu Gly Tyr Ala Ser Arg Ser Glu Ile Met Glu Thr
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Arg Ser Ser Asp Asp Ser Val Cys Phe Pro Ser Thr Cys Pro Trp Val
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Arg Val Ala Gln Val Asp Ala Ser Gly Val His Lys Pro Leu Ile Cys
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Asn Asn Cys Ser Ser Phe Ser Phe Tyr Ser Glu Leu Ala Asn Glu Val
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Val Thr His Leu Ile Ile Leu Thr Lys Gln Asp Phe Leu Phe Ile Val
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Asp Thr Lys Asp Val Leu Asn Gly Asp Val Ala Leu Gly Asn Val Phe
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Phe Val Ile Asp Gly Arg Arg Arg Asp Glu Glu Asn Met Ser Tyr Val
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Asn Ile Trp Glu Arg Gly Ala Lys Val Ile Gly Val Leu Asn Gly Asp
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Tyr Pro Arg Lys Leu Val Leu Ser Ser Ile Thr Asn Ala Leu Ala Gln
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Gln Arg Phe Lys Asp Ala Phe Asn Leu Val Arg Arg His Arg Ile Asp
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Phe Val Cys Ala Met Lys Asn Glu Asp Val Thr Glu Thr Leu Tyr Lys
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Lys Phe Ser Phe Ser Lys Lys Gly Asp Glu Val Phe Arg Val Lys Asp
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Ser Cys Ser Asn Lys Val Ser Ser Val Leu Gln Ala Ile Arg Lys Ala
              805   810   815

Leu Glu Glu His Ile Pro Glu Ser Pro Ser Arg Glu Leu Cys Ile Leu
              820   825   830

Thr Thr Leu Ala Arg Ser Asp Pro Pro Ala Ile Glu Glu Ser Leu Leu
          835   840   845

Arg Ile Lys Ser Val Arg Glu Met Glu Leu Leu Asn Ser Ser Asp Asp
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Ile Arg Lys Lys Ser Cys Pro Ser Ala Glu Glu Ala Leu Lys His Leu
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Leu Trp Leu Leu Asp Ser Glu Ala Val Phe Glu Ala Ala Leu Gly Leu
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Pro Lys Glu Phe Leu Pro Tyr Leu Gln Glu Leu Glu Lys Met Pro Glu
        915                 920                 925
Ser Leu Met His Phe Lys Ile Asp Ile Lys Leu Gln Arg Phe Asp Ser
    930                 935                 940
Ala Leu Arg Asn Ile Val Ser Ala Gly Val Gly Tyr Phe Pro Asp Cys
945                 950                 955                 960
Met Asn Leu Ile Lys Lys Asn Pro Gln Leu Phe Pro Leu Gly Leu Leu
                965                 970                 975

Leu Ile Thr Asp Pro Glu Lys Lys Leu Val Val Leu Glu Ala Trp Ala
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Asp His Leu Ile Asp Glu Lys Arg Phe Glu Asp Ala Ala Thr Thr Tyr
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Leu Cys Cys Cys Lys Leu Glu Lys Ala Ser Lys Ala Tyr Arg Glu Cys
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Gly Asp Trp Ser Gly Val Leu Arg Val Gly Ala Leu Met Lys Leu Gly
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Lys Asp Glu Ile Leu Lys Leu Ala Tyr Glu Leu Cys Glu Glu Val Asn
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Ala Leu Gly Lys Pro Ala Glu Ala Ala Lys Ile Ala Leu Glu Tyr Cys
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Ser Asp Ile Ser Gly Gly Ile Ser Leu Leu Ile Asn Ala Arg Glu Trp
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Glu Glu Ala Leu Arg Val Ala Phe Leu His Thr Ala Asp Asp Arg Ile
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Ser Val Val Lys Ser Ser Ala Leu Glu Cys Ala Ser Gly Leu Val Ser
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Glu Phe Lys Glu Ser Ile Glu Lys Val Gly Lys Tyr Leu Thr Arg Tyr
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Leu Ala Val Arg Gln Arg Arg Leu Leu Leu Ala Ala Lys Leu Lys Ser
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Glu Glu Arg Ser Val Val Asp Leu Asp Asp Asp Thr Ala Ser Glu Ala
        1155                1160                1165
Ser Ser Asn Leu Ser Gly Met Ser Ala Tyr Thr Leu Gly Thr Arg Arg
    1170                1175                1180
Gly Ser Ala Ala Ser Val Ser Ser Ser Asn Ala Thr Ser Arg Ala Arg
1185                1190                1195                1200
Asp Leu Arg Arg Gln Arg Lys Ser Gly Lys Ile Arg Ala Gly Ser Ala
            1205                1210                1215
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Gly Glu Glu Met Ala Leu Val Asp His Leu Lys Gly Met Arg Met Thr
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Asp Gly Gly Lys Arg Glu Leu Lys Ser Leu Leu Ile Cys Leu Val Thr
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Leu Gly Glu Met Glu Ser Ala Gln Lys Leu Gln Gln Thr Ala Glu Asn
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Phe Gln Val Ser Gln Val Ala Ala Val Glu Leu Ala His Asp Thr Val
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Ser Ser Glu Ser Val Asp Glu Glu Val Tyr Cys Phe Glu Arg Tyr Ala
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Ser Leu Ser Phe Arg Thr Asp Gly Asn Gln Ile Val Val Ile Leu Ala
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Asp Gly Arg Ala Leu Ile Val Glu Asp Gly Glu Val Met Asp Leu Glu
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Asp Glu Gln Thr Leu Ala Leu Ala Asp Asn Gln Thr Leu Tyr Leu Ala
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Ser Tyr Val Val Lys Trp Pro Ala Asn Gln Ile Glu Asp Arg Arg Ile
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Ile Glu Lys Ile Glu Trp Asn Ser Thr Gly Thr Ile Leu Ser Met Gln
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Thr Ser Leu Gly Lys Lys His Gln Leu Glu Phe Trp His Leu Ser Asn
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Tyr Glu Phe Thr Arg Lys Cys Tyr Trp Lys Phe Ser Glu Ser Ile Ile
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Ser Gly Gln Phe Phe Ser Val His Ile Thr Pro Thr Ala Ser Phe Ser
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Asp Val Ile Ser Gln Asn Val Val Val Ala Thr Asp Glu Leu Arg Met
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Tyr Ser Leu Cys Arg Arg Val Val Pro Pro Pro Met Cys Asp Tyr Ser
385             390             395             400

Ile Gln Cys Leu Ser Asp Ile Val Ala Tyr Thr Thr Ser Thr His His
            405             410             415

Val His Val Ile Thr Ser Asp Trp Lys Ile Ile Ser Cys Met Leu Phe
            420             425             430

Phe Lys Lys Lys Lys Arg Asn Tyr Ser Asn Pro Phe Phe Arg Lys Lys
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Tyr Ile Leu Glu Ile Leu Lys Val Pro Ser His Lys Thr Tyr Phe Ala
    450             455             460

Cys Phe Ala Val Ser Gln Asp Thr Asp Gly Tyr Lys Phe Asn Ser Asp
465             470             475             480

Arg Ala Ser Ile Asp Glu Val Leu His Thr Glu Val Thr Glu Gly Ile
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Asn Val Ser His Gly Lys His Gln Ile Ser Arg Val Gly Ala Asn Pro
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Ser Asn Lys His Val Glu Ile Ala Ser Asn Asp Gly Lys Phe Ile Asp
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Leu Asn Thr Lys Glu Glu Leu Phe Lys Ile Asp Lys Phe Glu Ser Thr
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Glu Val His Phe Ile Gln Val Cys His Gly Ile Leu Asn His His Val
            580                 585                 590

Ile Gln Val Asp Asn Ser Met Leu Phe Leu Asp Ser Glu Arg Val Ser
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Gln Asp Ala Ile Ser Ile Leu Thr Arg Gly Ser Asp Ile Leu Leu Ile
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Asp Phe Asp Asn Lys Leu Arg Phe Ile Asp Ala Glu Ser Gly Lys Thr
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Leu Glu Asp Val Arg Asn Val Glu Ala Gly Cys Glu Leu Val Ala Cys
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Glu Thr Ile Gln Pro Arg Arg Tyr Val Met Ala His Thr Arg Asp Leu
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Ser Leu Cys Met Thr Val Ala Arg Tyr Val Arg Asp Leu Ser Asp Ala
        755                 760                 765

Glu Lys Thr Lys Met Phe Pro Leu Leu Leu Thr Ala Leu Leu Ser Ala
    770                 775                 780

Arg Ser Lys Pro Ser Lys Val Asn Asp Cys Leu Lys Glu Val Gln Glu
785                 790                 795                     800

His Val Glu Lys Ile Ala Asp Arg Lys Asp Val Phe Thr Arg Asn Ser
            805                 810                 815

Leu His His Ile Ser Phe Phe Val Pro Ala Lys Glu Leu Phe Asn Cys
        820                 825                 830

Ala Leu Ser Thr Tyr Asp Leu Lys Leu Ala Gln Gln Val Ala Glu Ala
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Ser Asn Tyr Asp Pro Lys Glu Tyr Leu Pro Val Leu Asn Lys Leu Asn
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Glu Ala Trp Ile Asp Ala Val Ser Ser Leu Phe Leu Leu Asp Ser Ser
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Lys Glu Arg Gly Ser Glu Glu Thr Trp Trp Asn Asp Ile Glu Asp Ile
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Ile Ile Gln Arg Glu Lys Leu Tyr Gln Asp Ala Leu Thr Leu Val Lys
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Pro Gly Asp Arg Arg Tyr Lys Gln Cys Cys Glu Leu Tyr Ala Glu Leu
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Asp Asp Ile Ser Val Ile Ser Ser Ile Ser Ser Arg Ser Gly Ser Ser
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Lys Val Ser Met Ala Ser Thr Val Arg Arg Lys Gln Ile Glu Lys Lys
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Lys Ser Ser Leu Lys Glu Gly Gly Glu Tyr Glu Asp Ser Ala Leu Leu
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